Item No. 7E

CITY OF FLAGSTAFF
STAFF SUMMARY REPORT

To: The Honorable Mayor and Council

From: Nicole Woodman, Sustainability Manager
Ext.3208

Date: March 24, 2010

Meeting Date: April 6, 2010

Title: Consideration of Resolution No. 2010-16 which commits the City to increase energy efficiencies and renewable energy production and purchase for City facilities and properties.

Recommended Action: Read Resolution No. 2010-16 by title only.
Approve Resolution No. 2010-16.

ACTION SUMMARY:

Adoption of Resolution No. 2010-16 would commit the City to increasing energy efficiencies and renewable energy production and purchase for City facilities and properties.

DISCUSSION:
Background/History:

Since 2005 the City of Flagstaff has spent an average of $3,000,000 annually on electricity. Although consumption has dropped since 2007, the City is spending roughly the same amount due to rising energy costs. By increasing energy efficiencies and renewable energy production and purchase, the City of Flagstaff can be better protected against rising energy costs and continue its role as a leader in the community.

Key Considerations:

Increasing energy efficiency and renewable energy production promotes energy independence and long-term economic security. These efforts support the City's commitment to the Flagstaff community through strong leadership and sound fiscal management while adhering to the commitment of the U.S. Mayors Climate Protection Agreement (Resolution 2006-58) and the City's sustainability goals.

Rising energy costs and the City's reliance on the predominately groundwater-based utility system creates fiscal uncertainty in the short and long-term. Energy efficiencies and renewable energy initiatives can provide sound mechanisms for fiscal management.

Community Benefits and Considerations:

The City of Flagstaff can increase awareness of energy efficiency and renewable energy technologies by implementing projects that include educational components. For example, positioning renewable energy projects in highly visible locations that are easily accessible by the public will maximize the project's impact in the community. Citizens who are educated about the benefits of energy efficiencies and renewable energy technology and see the measures in action are more likely to implement similar measures.

Community Involvement:

Resolution No. 2010-16 would be applicable only to city buildings and properties. The City has the opportunity to showcase its efforts while increasing awareness of energy efficiency and renewable energy by creating demonstration sites at high visitation locations, such as the Aquaplex.

This draft resolution has been reviewed internally by the Sustainability Program's Leadership Team and the City Manager's Sustainability Cabinet. In addition, the Sustainability Commission supports the goals included in this resolution.

Financial Implications:

Financial implications of energy efficiency and renewable energy initiatives are project specific. They are influenced by the type of measures, funding mechanism, and location. For example, energy efficiency measures usually experience a faster rate of return than renewable energy initiatives. Efficiency measures typically experience a two to five year return on investment while renewable energy installations typically experience a seven to 15 year return. It is recommended that all potential projects go through a systematic cost-benefit analysis before moving forward through the approval process.

Following is an example of a hypothetical cost-benefit analysis for a solar photovoltaic system.

Hypothetical Cost-Benefit Scenario

If the City of Flagstaff were to engage a third party funder to finance renewable energy projects on City property for a 20 year fixed energy rate agreement, e.g. a power purchase agreement (PPA), there would be no upfront capital investment on the City's behalf for the system development and installation. The City's true investment would be realized in upfront increased utility expenses to purchase the power from the new renewable energy system.

The following example is hypothetical; assumptions are based on 3.3 megawatts of renewable energy installations at multiple sites. Figure 1 provides a cumulative energy cost analysis of a twenty year contract with a fixed energy rate of $0.129 per kilowatt hour. This scenario assumes that energy rates from the electric utility, APS, will escalate annually by four percent in years three through 20 (the Arizona Corporation Commission has frozen APS' rates for two years). This analysis demonstrates an increase in utility costs for year's one through 12 after which the

City would experience savings. Figure 2 provides an energy rate analysis that demonstrates a rate cross-over in year seven.

Figure 1

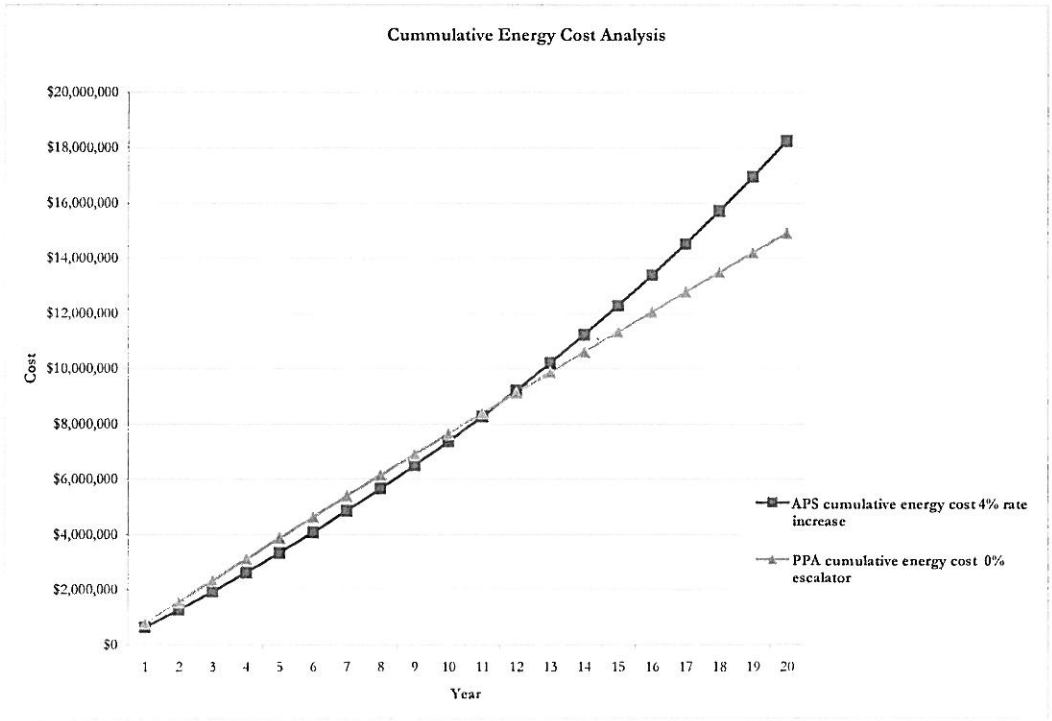
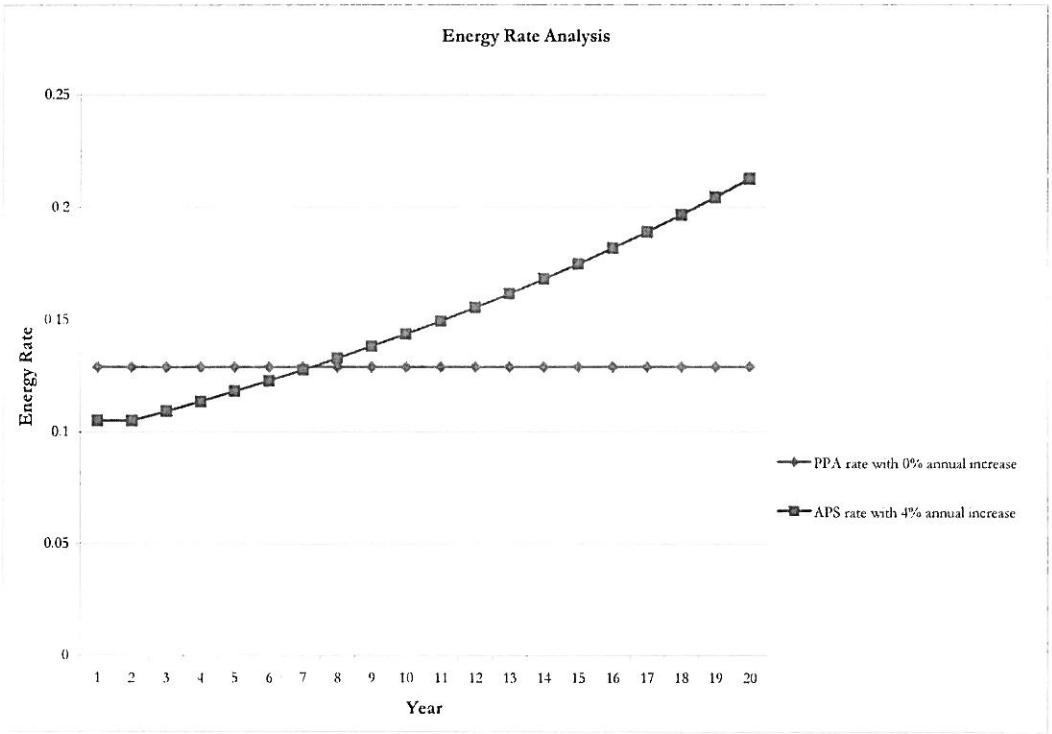


Figure 2



Thus, assuming that APS' rate increases four percent annually, the additional expense to the City for years one through 12 is $298,000 annually for a cumulative total of $3,575,532. Years 13 through 20 would experience a cost avoidance of $4,219,507. At the end of 20 years the cost savings is estimated at $643,975.

In summary, a PPA project would provide energy savings over the long-term. If the city paid for the installation of solar or other renewable energy sources up-front, energy savings would be immediate and provide positive cash-flow after the expense of the system is paid for with energy savings. An average pay-back period of seven to 15 years is typical for many photovoltaic systems.

Options and Alternatives:

1. Adopt Resolution No. 2010-16
2. Amend and Adopt Resolution No. 2010-16 with amendments
3. Reject Resolution No. 2010-16

Attachments/Exhibits:

- Resolution No. 2010-16

Erik Solberg

Department Head ***(Acknowledgment that all reviews have been completed and required approvals initialed below.)***

INITIALS	RESPONSIBILITY	DATE	INITIALS	RESPONSIBILITY	DATE
	BIDS/PURCHASES			FINANCE/BUDGET	
	GRANTS			CONTRACTS	
DW	LEGAL	3/24/10		IGAS	
RCS	SEMS	3/24/10		Resolution-Int	3-24-10

DATE OF COUNCIL APPROVAL: _____

RESOLUTION NO. 2010-16

A RESOLUTION OF THE MAYOR AND CITY COUNCIL OF THE CITY OF FLAGSTAFF, ARIZONA, COMMITTING TO INCREASED ENERGY EFFICIENCIES AND RENEWABLE ENERGY PRODUCTION AND PURCHASE FOR CITY FACILITIES AND PROPERTIES.

WHEREAS, the City of Flagstaff is committed to excellence and leadership in the community; and

WHEREAS, the City of Flagstaff has a long history of protecting natural resources; and

WHEREAS, the City of Flagstaff has voluntarily agreed to reduce greenhouse gas emissions through the endorsement of the U.S. Mayors Climate Protection Agreement as put forward by Resolution 2006-58; and

WHEREAS, the City of Flagstaff has voluntarily agreed to build all new, occupied City facilities to Leadership in Energy and Environmental Design (LEED) standards as put forward by Resolution 2008-32; and

WHEREAS, science demonstrates that the emissions released from the burning of fossil fuels can be substantially reduced by investing in energy efficiency and renewable energy sources such as solar, wind, biomass and geothermal; and

WHEREAS, the City of Flagstaff is aware of the economic, environmental, and societal benefits of taking a lead role in the United States implementation of renewable energy; and

WHEREAS, energy efficiency, and renewable energy promotes energy independence and economic security; and

WHEREAS, the City of Flagstaff desires to lead by example through incorporating energy efficiency and renewable energy initiatives on City facilities;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FLAGSTAFF AS FOLLOWS:

Section 1: That the Mayor and City Council hereby commit to energy efficiency improvements in existing City buildings and to uphold the City's commitment to the Department of Energy's ENERGY STAR partnership through the purchase of appliances and equipment that are, at a minimum, ENERGY STAR rated.

Section 2: That the Mayor and City Council hereby make a commitment for the City of Flagstaff to generate safe, reliable, and affordable power that achieves a balance between high quality, low cost energy and the environmental impacts of providing those energy resources.

Section 3: That the Mayor and City Council commit for City facilities and properties:

(a) The development of long-term energy planning, which incorporates preparedness for future energy intensive initiatives and protects the City from rising energy costs, and;

(b) Renewable energy projects will take long-term fiscal, environmental and societal benefit into consideration, and;

(c) Renewable energy projects and renewable energy purchasing combined will meet, at a minimum, 15 percent of the City's energy consumption by 2012, 20 percent by 2015, 35 percent by 2020, and 50 percent by 2050, and;

(d) Energy efficiency and renewable energy projects will promote community awareness.

Section 4: That the Mayor and City Council commit municipal operations to follow the guidelines set forth by municipal sustainability policies that promote responsible use of City resources.

Section 5: That the Mayor and City Council continue to support efforts to promote energy efficiency and renewable energy in the Flagstaff community.

Section 6: That the Mayor and City Council support efforts to identify state and local financing models for energy efficiency and renewable energy.

PASSED AND ADOPTED by the City Council and approved by the Mayor of the City of Flagstaff this _____ day of _____, 2010.

_____
MAYOR

ATTEST:

_____
CITY CLERK

APPROVED AS TO FORM:

David Womochil for
CITY ATTORNEY